

FIG. 1

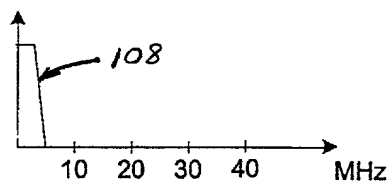


FIG. 2

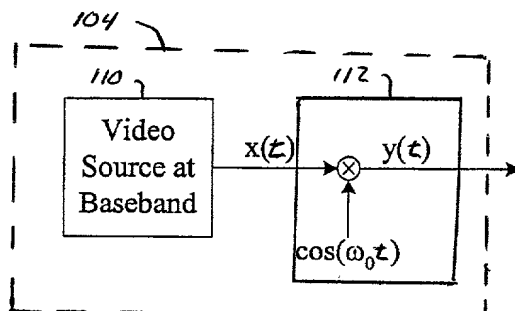


FIG. 3

206T20" 9206200T

FIG. 4A

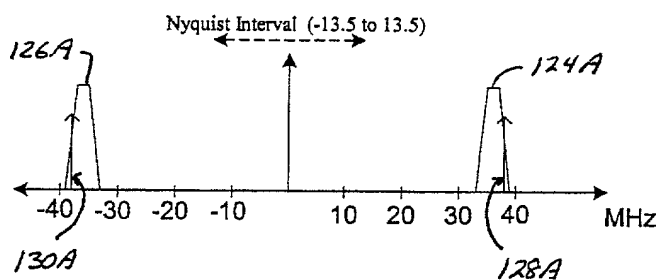


FIG. 4B

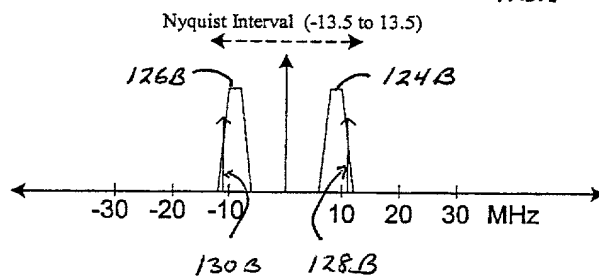


FIG. 5A

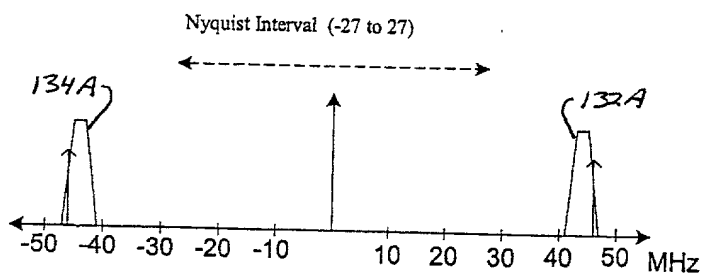
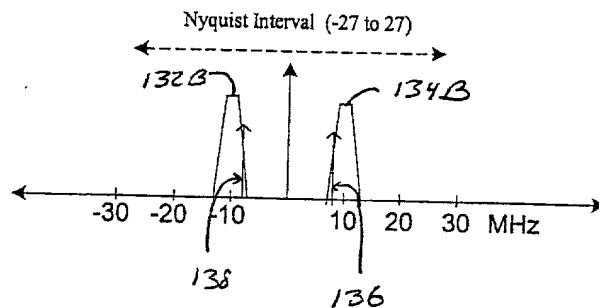


FIG. 5B



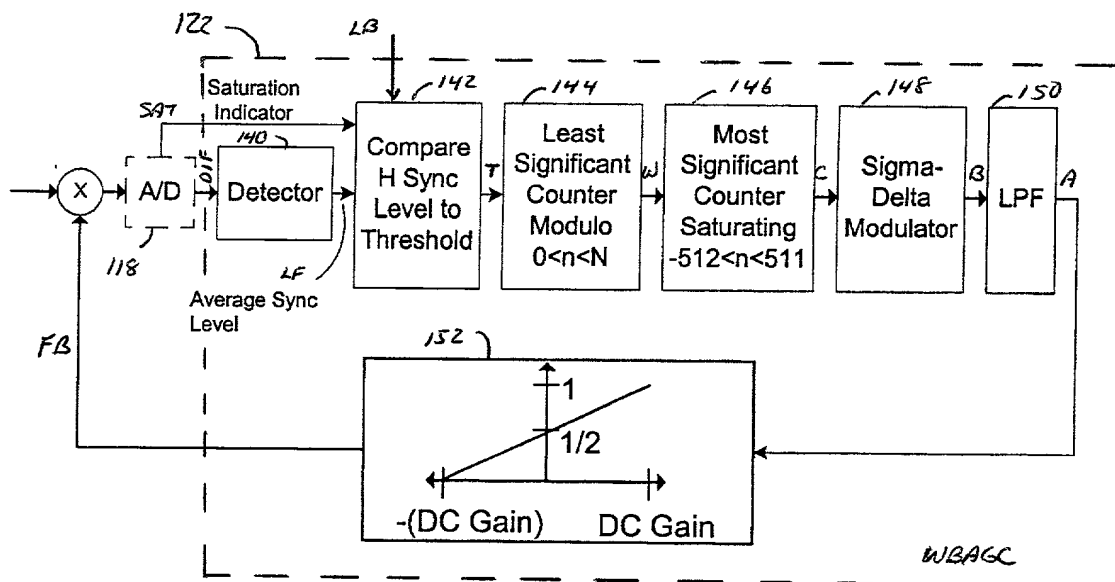


FIG. 6

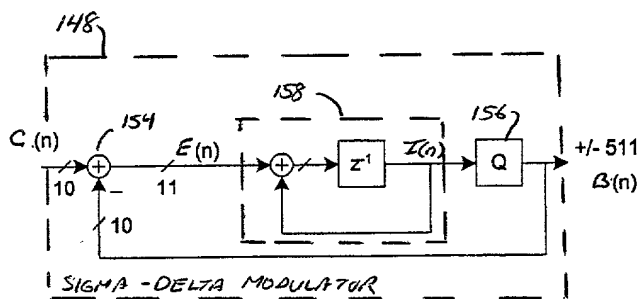


FIG. 7

The diagram illustrates a PLL system for a video decoder, enclosed in a dashed box labeled 140. The system consists of several interconnected blocks and signal paths:

- Phase and Amplitude Detector (160):** Receives the **DIF** (Demodulated Intermediate Frequency) signal and provides an **Average H Sync Level to WBAGC** signal. It outputs a **Phase Error (PE)** signal (9 bits) to the **Tracking Detector** (166) and the **Loop Filter** (178).
- Tracking Detector (166):** Receives the **PE** signal and outputs a **Direct Gain** signal (8 bits) to the **Loop Filter** and an **Indirect Gain** signal (8 bits) to the **NCO** block.
- Loop Filter (178):** Receives the **Direct Gain** signal and outputs a signal (12 bits) to the **Tracking Detector** and the **NCO** block.
- NCO (164):** A Numerically Controlled Oscillator that receives the **Indirect Gain** signal and the output from the **Loop Filter**. It is configured for **PAL: 27 MHz** and **NTSC: 54 MHz**. It outputs a signal (24 bits) to the **Tracking Detector** and the **Loop Filter**.
- Tracking Detector (166) Internal Structure:** The **PE** signal is processed through a series of operations: it is multiplied by the **Indirect Gain** (8 bits), then shifted right by 9 bits (8 bits output), then added to the output of the **Loop Filter** (12 bits), and finally shifted right by 2 bits (11 bits output). This 11-bit signal is then added to the output of the **NCO** (24 bits) to produce the **Direct Gain** (8 bits).
- Feedback Loop (167):** The **Direct Gain** signal is fed back to the **Loop Filter** and the **NCO** block.
- Other Labels:** The **Loop Filter** is also labeled **Update at NCO rollover**. The **Tracking Detector** is labeled **166**. The **NCO** block is labeled **164**.

166

Tracking Detector

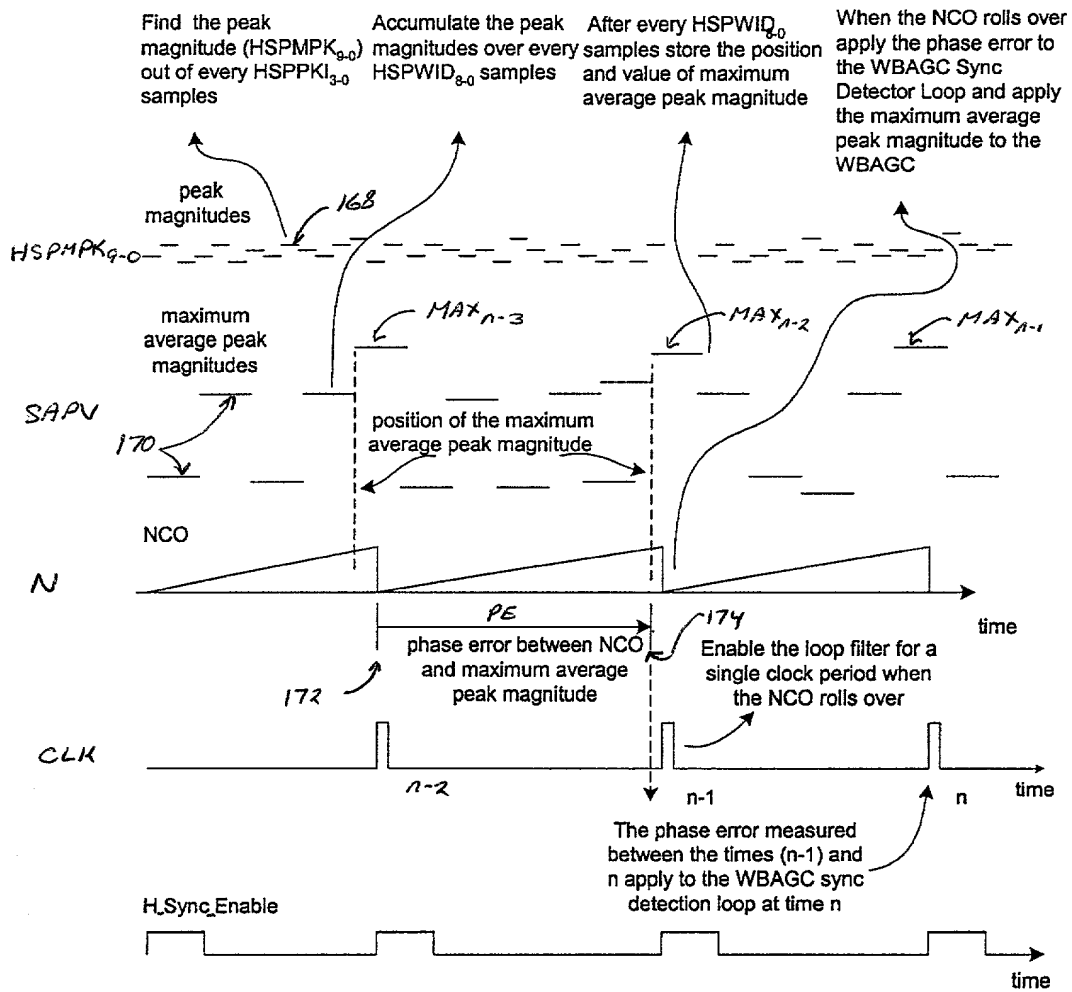


FIG. 10

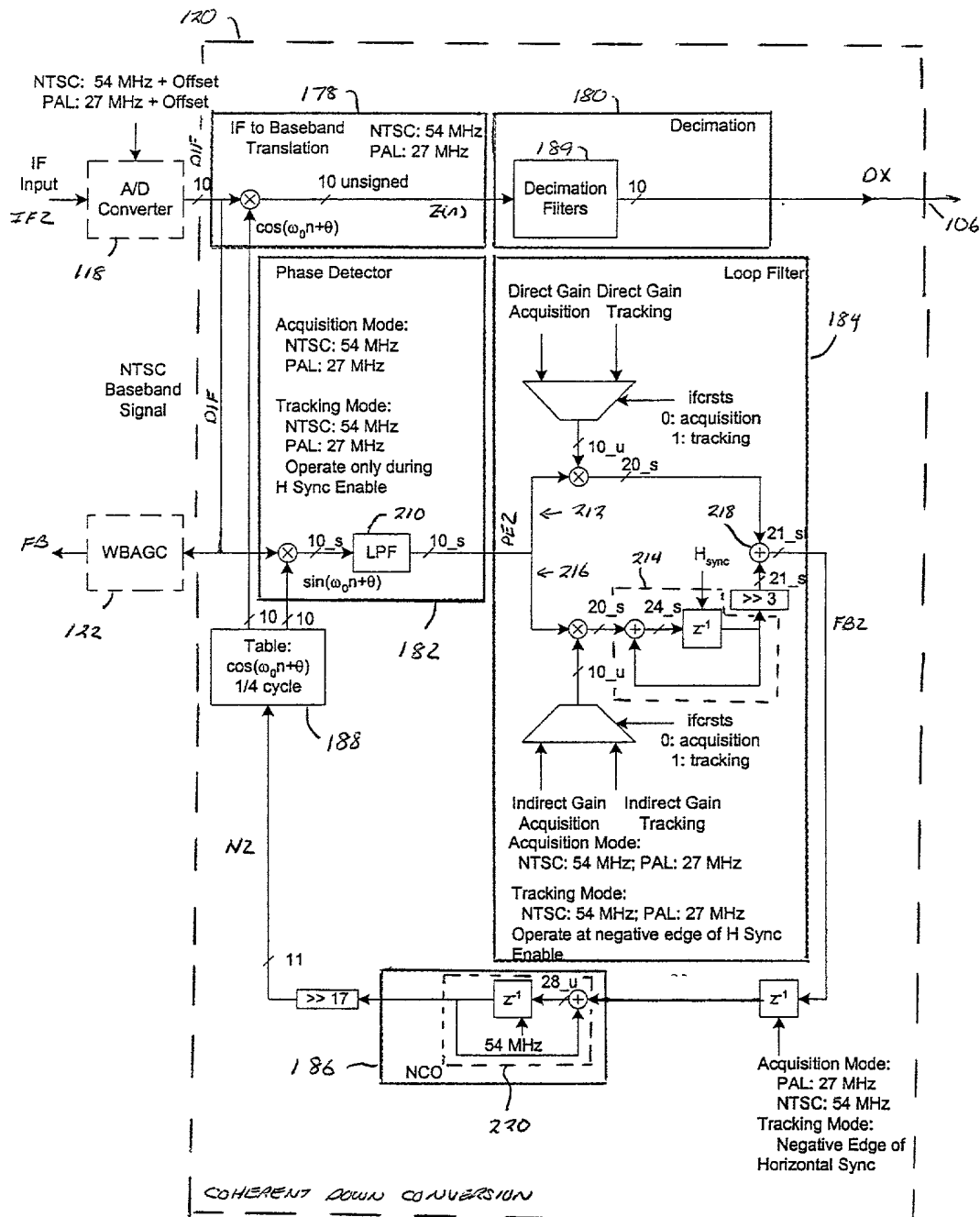


FIG. 11

FIG. 12

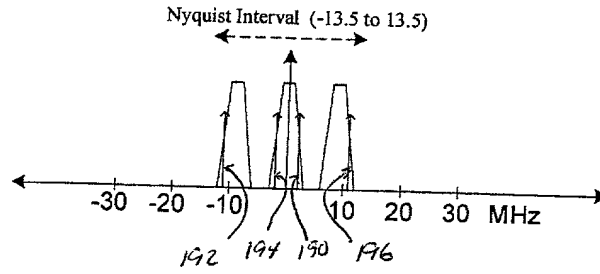


FIG. 13

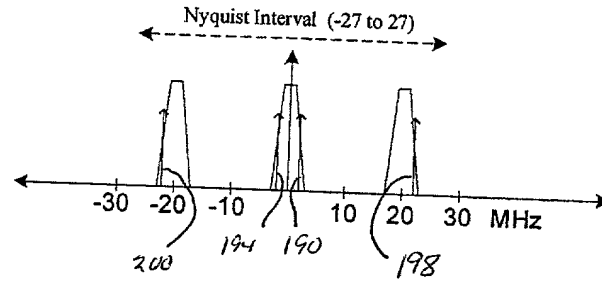


FIG. 14

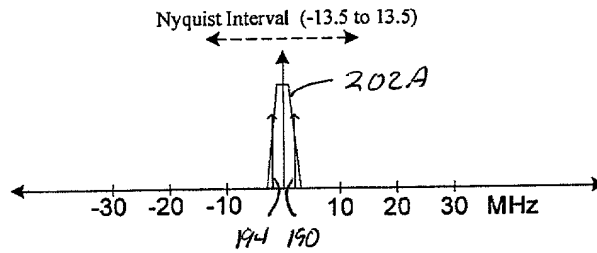
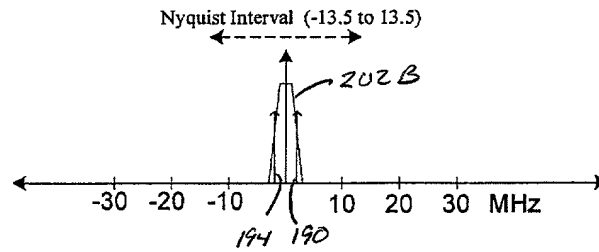


FIG. 15



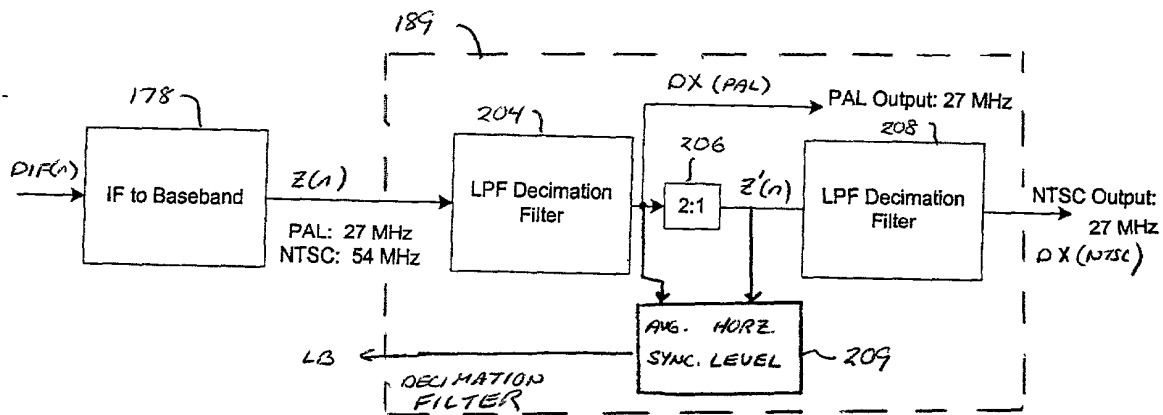


FIG. 16

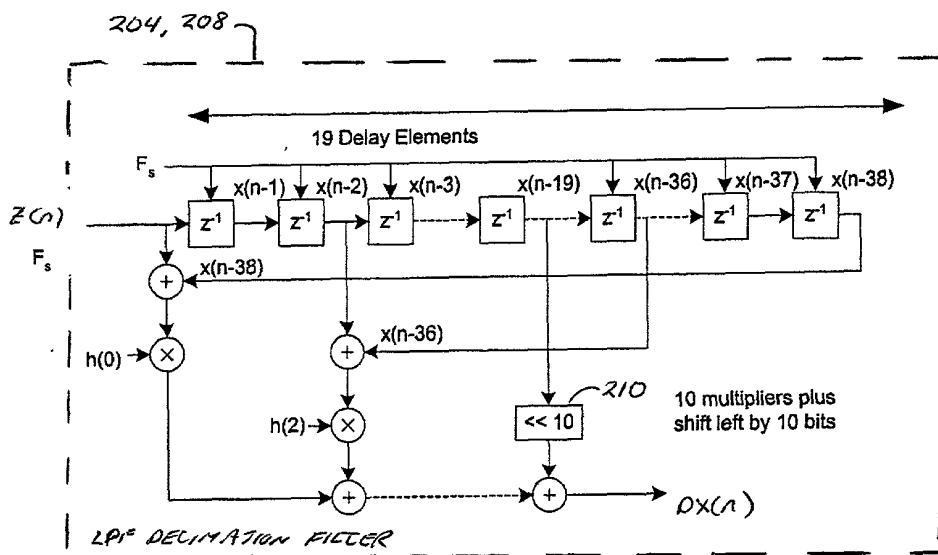


FIG. 17

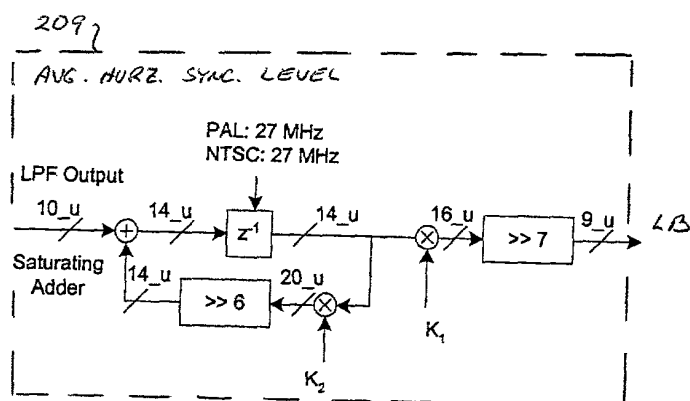


FIG. 18

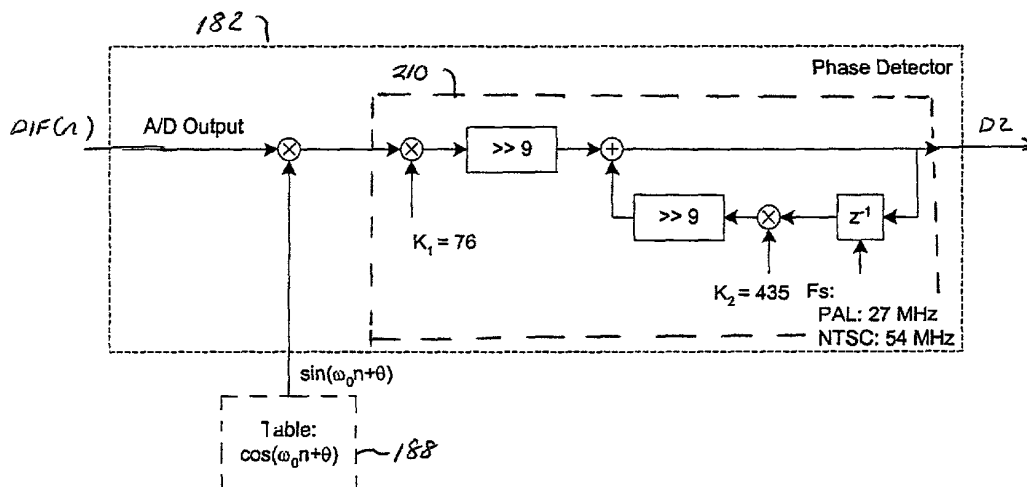


FIG. 19